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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,096	03/15/2004	Otman Basir	60,449-097	9269
26096	7590	09/25/2006	EXAMINER	
CARLSON, GASKEY & OLDS, P.C. 400 WEST MAPLE ROAD SUITE 350 BIRMINGHAM, MI 48009			MANCHO, RONNIE M	
			ART UNIT	PAPER NUMBER
			3663	

DATE MAILED: 09/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/801,096

Applicant(s)

BASIR ET AL.

Examiner

Ronnie Mancho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2006.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-24 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1 and 20, the applicant recites “based upon step d)”. The phrase lacks antecedent basis.

The rest of the claims are rejected for depending on a rejected base claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Kamel (5528698).

Regarding claim 1, Kamel et al (figs. 1-3, 6-8) disclose a method for classifying an occupant including the steps of:

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- a). capturing an image of a plurality of occupant seating areas (abstract; col. 3, lines 59-63; col. 4, lines 3-6; col. 5, lines 47-56) in a vehicle;
- b). dividing the image into a plurality of subimages of predetermined spatial regions (col. 6, lines 18-39);
- c). generating a spatial feature matrix of the image based upon the plurality of subimages (pixels, col. 6, lines 18-39); ;
- d). analyzing the spatial feature matrix (col. 6, lines 11-39); and
- e). classifying a plurality of occupants (col. 6, lines 51 to col. 7, lines 14) in the occupant areas based upon said step d).

Regarding claim 2, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method of claim 1 further including the step of processing the image to account for lighting and motion before said step d).

Regarding claim 3, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method of claim 1 further including the step of smoothing the classification of the occupant over time.

Regarding claim 4, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method of claim 1 further including the step of determining whether to activate an active restraint based upon the classification of said step e).

Regarding claim 5, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method of claim 1 wherein said step d) further includes the step of applying expert classifier algorithm to the spatial feature matrix.

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Regarding claim 6, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method of claim 5 wherein said step d) further includes the step of analyzing the spatial feature matrix based upon a set of training data.

Regarding claim 7, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method of claim 6 further including the step of creating the set of training data by capturing a plurality of images of known occupant classifications of the occupant area.

Regarding claim 8, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method of claim 5 wherein the expert classifier algorithm includes a neural network.

Regarding claim 9, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method of claim 1 wherein the plurality of subimages overlap one another.

Regarding claim 10, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the vehicle occupant classification system comprising: an image sensor for capturing an image of a plurality of occupant areas; and a processor dividing the image into a plurality of subimages, the processor analyzing the subimages to determine a classification of the occupants in each of the plurality of occupant areas.

Regarding claim 11, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the vehicle occupant classification system of claim 10 wherein the processor determines the classification of the occupant from among the classifications including: adult, child and infant seat.

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Regarding claim 12, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the vehicle occupant classification system of claim 11 wherein the processor determines the classification of the occupant from among the classifications including: adult, child, forward-facing infant seat and rearward-facing infant seat.

Regarding claim 13, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the vehicle occupant classification system of claim 10 wherein the processor generates a spatial feature matrix based upon the plurality of subimages.

Regarding claim 14, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the vehicle occupant classification system of claim 13 further including at least one filter generating the spatial feature matrix based upon the plurality of subimages.

Regarding claim 15, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the vehicle occupant classification system of claim 14 further including an image processor for altering the image based upon lighting conditions and based upon motion.

Regarding claim 16, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the vehicle occupant classification system of claim 15 wherein the processor analyzes the spatial feature matrix to determine the occupant classification using a neural network.

Regarding claim 17, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the vehicle occupant classification system of claim 10 further including a temporal smoothing filter applying a decaying weighting function to a plurality of previous occupant classifications to determine a present occupant classification.

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Regarding claim 18, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the vehicle occupant classification system of claim 17 further including a confidence weighting function applied to the plurality of previous occupant classifications to determine the present occupant classification.

Regarding claim 19, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the vehicle occupant classification system of claim 10 further including a plurality of digital filters extracting low-level descriptors from each of the subimages, the processor analyzing the low-level descriptors to determine the classification of the occupant.

Regarding claim 20, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method for classifying an occupant including the steps of:

- a). capturing an image of a plurality of occupant areas (abstract; col. 3, lines 59-63; col. 4, lines 3-6; col. 5, lines 47-56);
- b). dividing the image into a plurality of subimages of predetermined spatial regions;
- c). generating a plurality of low-level descriptors from each of the plurality of subimages;
- d). analyzing the low-level descriptors; and
- e). classifying an occupant in each of the plurality of occupant areas based upon step d).

Regarding claim 21, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method of claim 20 wherein said step d) further includes the step of analyzing the low-level descriptors based upon a set of training data.

Regarding claim 22, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method of claim 21 further including the step of creating the set of

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training data by capturing a plurality of images of known occupant classifications of the occupant area.

Regarding claim 23, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method of claim 20 wherein said steps d) and e) are performed using a neural network.

Regarding claim 24, Kamel et al (figs. 1-3, 6-8; col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14) disclose the method of claim 20 wherein said step d) is based upon system parameters including an orientation or a location from which the image is captured relative to the occupant area.

Response to Arguments

5. Applicant's arguments filed 4/20/06 have been fully considered but they are not persuasive.

The applicant traverses the rejection on the basis that the prior art does not disclose capturing an image of a plurality of occupant seating areas in a vehicle. In response, the examiner respectfully disagrees. The disputed limitation is disclosed in the prior art (abstract; col. 3, lines 59-63; col. 4, lines 3-6; col. 5, lines 47-56). The prior art further discloses classifying occupants in each of a plurality of occupant areas col. 6, line 11-26; 18-39, 51-67; col. 7, lines 1-14).

Therefore, the prior art anticipates the claims. The rejection thus stands.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Communication

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronnie Mancho whose telephone number is 703-305-6318. The examiner can normally be reached on Mon-Thurs: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Black can be reached on 703-305-9707. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ronnie Mancho
Examiner
Art Unit 3663

September 14, 2006



JACK KEITH
SUPERVISORY PATENT EXAMINER